

RESULTS OF A SIMPLIFIED TECHNIQUE FOR BURIED PENIS REPAIR

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ABSTRACT

Purpose: The buried penis can cause secondary phimosis, recurrent balanitis and social embarrassment. We report our results using a simplified technique for repair.

Materials and Methods: A retrospective chart review of 83 consecutive patients undergoing buried penis repair between March 1995 and March 2001 was performed. Indications for surgery included recurrent balanitis, secondary phimosis, difficulty holding the penis during voiding, spraying of the urinary stream, or parental or patient concern for social embarrassment. The technique involves fixation of the subcutaneous penile skin at the base of the degloved penis to Buck's fascia of the penile shaft at the 3 and 9 o'clock positions.

Results: For the 79 patients included in the study average followup was 4.4 years. Group 1 consisted of 26 patients who underwent circumcision at the time of buried penis repair. Six patients had hypospadias and 13 had penoscrotal webbing that was repaired simultaneously. Three patients (11.5%) had recurrent buried penis that required a repeat procedure and 1 (3.8%) required revision of the circumcision only. Three patients (11.5%) with penoscrotal webbing had mild recurrence requiring no further treatment. Group 2 consisted of 49 patients who underwent revision of the circumcision at the time of buried penis repair. Seven patients (14.3%) had mild recurrence that did not require further treatment. Group 3 consisted of 4 patients who underwent liposuction at the time of buried penis repair. One patient experienced lymphedema of the ventral distal shaft skin, which required subsequent excision.

Conclusions: The buried penis repair is a simple and effective outpatient procedure with few complications and recurrences. It can be used as a primary or secondary procedure and affords good cosmetic results.

KEY WORDS: penis/abnormalities, penis/surgery

The buried penis is often of great concern to the patient and his family. It is most commonly caused by excessive suprapubic adipose tissue and inadequate attachment of the penile skin to the shaft. The condition occurs in circumcised and uncircumcised boys. Removal of what appears to be excessive foreskin without fixation of the penile skin to Buck's fascia can result in inadequate shaft skin, worsening of the condition and scarring. In severe cases the shaft skin may be deficient, requiring rotational flaps or grafts for coverage.¹ The buried penis may result in secondary phimosis, recurrent balanitis, difficulty voiding or social embarrassment. Many different techniques for repair have been described. We report our results using a simple technique for repair.

METHODS

A retrospective chart review of 83 consecutive patients undergoing buried penis repair by a single surgeon between March 1995 and March 2001 was performed. Patient age ranged from 6 months to 13 years. Indications for surgery included recurrent balanitis, secondary phimosis, difficulty holding the penis during voiding, spraying of the urinary stream, social embarrassment or parental concern for future social embarrassment.

Patient groups. Patients were classified into 3 groups for comparison. Group 1 consisted of 26 patients who underwent buried penis repair and circumcision. Six patients had hypospadias and 13 had penoscrotal webbing that was repaired simultaneously. Group 2 consisted of 49 patients who underwent buried penis repair and circumcision revision. Group 3

included 4 patients who underwent liposuction at the time of buried penis repair.

Technique. A holding suture is placed in the glans for traction purposes (figs. 1 and 2). One percent lidocaine with 1:100,000 epinephrine is instilled along the subcoronal circumference. A circumferential subcoronal incision is made and the penis is degloved to the penopubic junction using Buck's fascia as the plane of dissection. The subcutaneous skin at the base of the shaft is fixed to Buck's fascia using 5-zero polydioxanone at the 3 and 9 o'clock positions. In a small number of our patients multiple, evenly spaced fixation sutures were placed. The circumferential incision is then reapproximated at the corona in an interrupted fashion with absorbable suture. At the end of the procedure the bladder is drained and a sterile dressing is applied.

RESULTS

The charts of 83 patients were reviewed. Four patients were lost to followup. Mean followup of the 79 patients included in the study was 232 weeks (range 67 to 387). Of the 26 patients in group 1, 4 (15.4%) required a second procedure. Three patients had recurrent buried penis that required revision, including 1 who underwent repair of glanular hypospadias and 2 with penoscrotal webbing. One patient underwent revision of the circumcision only. Three patients (11.5%) with penoscrotal webbing had mild recurrence requiring no further treatment (tables 1 and 2).

None of the 49 patients in group 2 required a second procedure. Thirteen of these patients presented with secondary phimosis. Seven patients (14.3%) had mild recurrence that did not require further treatment. One patient had ventral edema that resolved by 8 weeks and 1 had meatal stenosis 6 months postoperatively. In addition to placement

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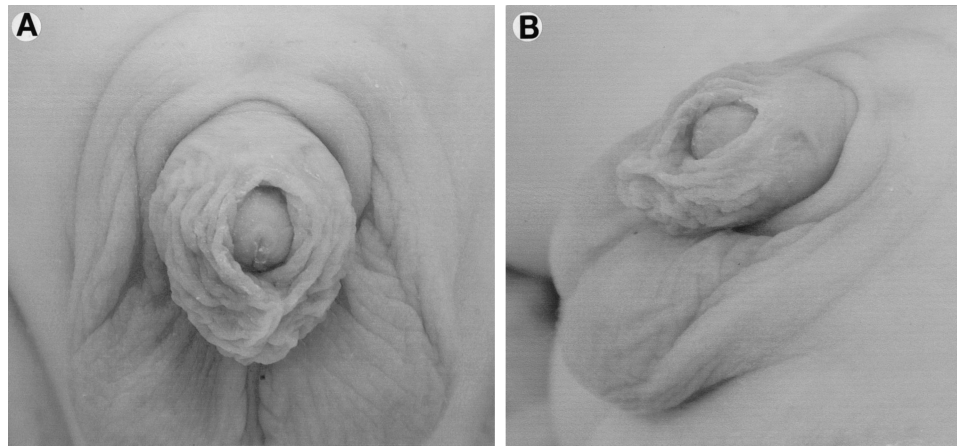


FIG. 1. Preoperative appearance of buried penis, which had been circumcised at birth

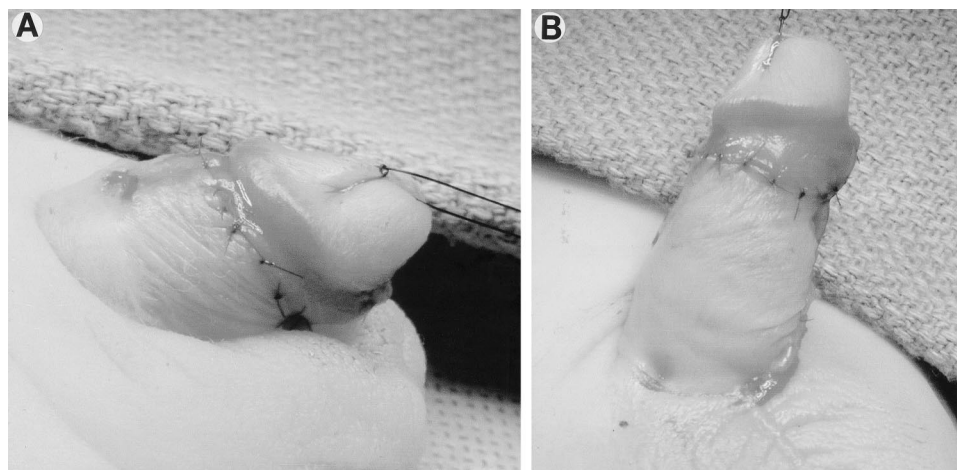


FIG. 2. A, postoperative appearance following fixation at penopubic angles and revision of circumcision. B, dimple at penopubic angle denotes fixation of dermis to Buck's fascia. Fixation is done at 3, 6 and 9 o'clock positions.

TABLE 1

	No. Group 1 (%)	No. Group 2 (%)	No. Group 3 (%)
Total pts	26	49	4
Overall success rate	19 (73.1)	42 (85.7)	3 (75)
Repeat buried penis repair	3 (11.5)	0	0
Other procedure	1 (3.8)	0	1 (25)
Recurrence requiring no further treatment	3 (11.5)	7 (14.3)	0

TABLE 2

Complication	No. Pts (%)
Meatal stenosis	1 (1.3)
Ventral edema	1 (1.3)
Suture removal	1 (1.3)
Yeast infection	1 (1.3)
Bleeding	1 (1.3)

of the fixation sutures at the penoscrotal junction, 4 patients underwent takedown of the suspensory ligament. One of these patients had mild recurrence of buried penis that did not require further revision.

Group 3 consisted of 4 patients who underwent liposuction at the time of buried penis repair. One patient had torsion of the penile shaft with lipodystrophy and scarring of the glans before surgery. He experienced lymphedema of the ventral distal shaft skin, which required subsequent excision 6 months after the original surgery.

DISCUSSION

The term "buried penis" includes a wide spectrum of presentations. Keyes first described the buried penis in 1919 as "the apparent absence of the penis."² He noted that the penis was "buried" beneath the skin of the abdomen, thigh or scrotum. In this case a mobile mass was palpated above the scrotal skin. Upon exploration it was discovered to be the penis. In 1951 Campbell reported on the penis buried beneath subcutaneous fat of the scrotum, perineum, hypogastrium and thigh.³

Two classification systems of the buried penis have been proposed. The classification system proposed by Crawford includes 3 broad categories—concealed penis, buried penis (partial or complete) and penoscrotal webs.⁴ The surgical technique used for correction depends on the class of the disorder. Maizels et al proposed a classification system consisting of 4 categories based on the mechanism of the concealment—buried penis, webbed penis, trapped penis and micropenis.⁵

Various techniques for repair of the buried penis have been described. Maizels et al used a suprapubic approach to incise the suspensory ligament of the penis and perform lipectomy of the suprapubic fat pad.⁵ The dermis and subcutaneous skin at the base of the penis were anchored to the periosteum of the pubis. Postoperative suction drainage and an abdominal binder were required. The technique described by Wollin et al included complete degloving of the penis with dissection of the abnormal ventral dartos attachments.⁶ An island pedi-

cle flap of inner preputial skin is created and transposed to the ventral penile shaft through a buttonhole made at the base of the pedicle. Both authors reported satisfactory cosmetic and functional results in all patients.

In 1999 Casale et al reviewed a series of 43 patients.¹ Cases were divided into 3 groups—congenital, iatrogenic and complex cases with obesity. Repair in all cases involved degloving the penis to its base with fixation at the penoscrotal angle. Reconstructive techniques were then used depending on the length of shaft skin. A total of 25 patients required penile skin flaps or Z-plasties. Scrotal flaps were used in 9 patients and 1 patient required a skin graft. Cromie et al made a circumferential incision 1 cm from the corona to ensure adequate skin coverage over the penile shaft.⁷ They also advocated incising the scarred circumferential band vertically, long enough to release it. Buck's fascia was sutured to the dermis of the penile skin at the 10 and 2 o'clock positions at the penoscrotal junction and the mid shaft using absorbable suture. In their series of 74 patients treated with this surgical technique excellent results were achieved. None of these patients required additional cosmetic procedures such as Z-plasty or skin grafts.

Since 1995, we have been using a technique similar to that reported by Cromie et al.⁷ We reviewed our results in 79 consecutive patients who underwent buried penis repair. The overall rate of recurrence was 16.5% with only 3.8% requiring a repeat repair. Four patients underwent takedown of the suspensory ligament and 4 underwent simultaneous liposuction. Given the excellent cosmetic results in the majority of patients without these additional procedures, they seem unnecessary in all but the most severe cases. Minor complications were few and resolved with appropriate treatment.

Casale¹ and Cromie⁷ et al emphasized complete degloving

of the penis. Bands of dysplastic dartos tissue tethering the penis are released and adequate fixation of the penile skin to Buck's fascia can be achieved. The number of fixation sutures used did not affect the recurrence rate in our series. Two fixation sutures at the penoscrotal junction were adequate in the majority of cases.

CONCLUSIONS

The buried penis repair is a simple and effective outpatient procedure with few complications and recurrences. Complete degloving of the penis to its base is essential to the repair. It can be used as a primary or secondary procedure and affords excellent long-term cosmetic results.

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